

## PATENT ABSTRACTS OF JAPAN

(11) Publication number: 09-120081  
 (43) Date of publication of application: 06.05.1997

(51) Int. Cl.

G02F 1/1335  
G02F 1/138

(21) Application number: 07-278644  
 (22) Date of filing: 28.10.1995

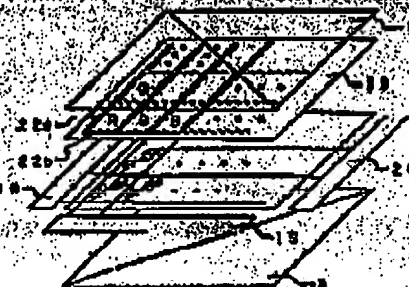
(71) Applicant: HITACHI LTD  
 (72) Inventor: OE MASATO  
 ARAYA SUKEKAZU  
 MATSUYAMA SHIGERU  
 ASUMA HIROAKI  
 KINUGAWA KYOSHIRO

## (54) ACTIVE MATRIX TYPE LIQUID CRYSTAL DISPLAY DEVICE

## (57) Abstract

**PROBLEM TO BE SOLVED:** To obtain a wide visual field angle and to obviate the occurrence of crosstalk by specifying the specific resistance of light shielding film formed in parallel with video signal electrode.

**SOLUTION:** A black matrix 22a in parallel with the video signal electrode and a black matrix 22b parallel with scanning electrode are varied in constitution. Namely, crosstalk phenomenon is decreased by setting the specific resistance of the black matrix (BM) 22a parallel with the video signal electrode at  $<108\Omega\text{cm}$ . The shielding effect of the unnecessary electric field of the common electrode adjacent to the video signal electrode is assisted by setting the specific resistance of the BM parallel with the video signal electrode at  $<108\Omega\text{cm}$  in such a manner. The value is based on the result of the experiment that an insulator having  $<108\Omega\text{cm}$  absorbs the electric field in spite of being an insulator. Further, the double structure to form the BM facing the video signal electrode to the specific resistance of  $<108\Omega\text{cm}$  and covering the BM with the insulator of  $\geq 108\Omega\text{cm}$  is adopted.



## LEGAL STATUS

[Date of request for examination] 04.08.1999  
 [Date of sending the examiner's decision of rejection]  
 [Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]  
 [Date of final disposal for application]  
 [Patent number]  
 [Date of registration]  
 [Number of appeal against examiner's decision of rejection]  
 [Date of requesting appeal against examiner's decision of rejection]  
 [Date of extinction of right]

Copyright (C) 1998,2000 Japan Patent Office